

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2004/001993

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁷: H04Q 7/20, H04L 12/66

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: H04Q 7/20, H04L 12/66, H04Q*, H04L*, G06F* (all subclasses, keywords)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms

Canadian Patent Database, IEEEExplore, Delphion, Google (using keywords: wireless network, carrier network, private network, instant communications, PoC, Push to Talk, generic identifier, and SIP)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant	Relevant to claim No(s).
A	WO 01/67674 A2 (MAGGENTI et al.), 13 September 2001 (13.09.2001) see pages 3-64	1, 4, 8-17, 19, 21, 24
P, A	Architecture V2.0.8 - Technical Specification: Push-to-Talk over Cellular (PoC); Architecture; PoC Release 2.0 (COMNEON, ERICSSON, MOTOROLA, NOKIA and SIEMENS), June 2004 (06.2004) Available from the Internet: http://www.motorola.com/mot/doc/1/1565_MotDoc.pdf pages 1-49	1-25
P, X	page 19 (paragraph 7.1.2)	25
P, A	US 2004/0202117 A1 (WILSON et al.), 14 October 2004 (14.10.2004) see entire document	1, 13, 21, 24, 25

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

Special categories of cited documents :
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Date of the actual completion of the international search

03 March 2005 (03-03-2005)

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Information on patent family members

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
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AMENDED CLAIMS

[received by the International Bureau on 16 May 2005 (16.05.2005): original claims 1-25 have been replaced by amended claims 1-25].

1. A private instant communications processing element for use in conjunction with a first carrier network, the first carrier network providing wireless access to a first plurality of wireless user devices, the first plurality of wireless user devices comprising at least one first private user device, and being configured to route signals from the at least one first private user device to the private instant communications processing element, the private instant communications processing element being adapted to:

receive instant communications signals from the at least one first private user device via the first carrier network;

perform instant communications signal processing on the instant communications signals for the at least one first private user device and to transmit instant communications signals to the at least one first private user device via the first carrier network.

2. The private instant communications processing element of claim 1 further adapted to:

assign a generic identifier for the at least one first private user device to be included in a carrier network delivered instant communications session;

generate a combined signal for the at least one first private user device to be included in the carrier network delivered instant communications session, and to transmit the combined signal to the carrier network with the

delivered carrier instant communications session.

3. The private instant communications processing element of claim 2 wherein the combined signal is
5 transmitted to a PoC (push-to-talk over cellular) server within the carrier network where the combined signal is treated as coming from a single user.

4. The private instant communications processing element of claim 1 for use in further conjunction with a
10 second carrier network, the second carrier network providing wireless access to a second plurality of user devices, the second plurality of user devices comprising at least one second private user device, and being configured to route signals from the at least one second private user device to
15 the private instant communications processing element, wherein the private instant communications processing element is further adapted to:

receive signals from the at least one second private user device via the second carrier network;

20 perform instant communications processing on signals received from the at least one first private user device and the at least one second private user device to produce instant communications signals for transmission to the at least one first private user device and to produce
25 instant communications signals for transmission to the at least one second private user device.

5. The private instant communications processing element of claim 4 where the first plurality of user devices comprises at least one first regular user device, and the

second regular user device, adapted to:

assign a first generic user identifier appearing
as a first single user within a first instant communications
5 session established by the first carrier network and to
assign a second generic user identifier appearing as a
second single user within a second instant communications
session established by the second carrier network;

combine all second regular user device signals and
10 all first and second private user device signals into a
first combined signal and sending the first combined signal
to a first carrier instant communications processing element
of the first carrier network which in turn sends it to first
regular user devices via the first carrier network using the
15 first generic identifier;

combine all first regular user device signals and
all the first and second private user device signals into a
second combined signal and sending the second combined
signal to a second carrier instant communications processing
20 element of the second carrier network which in turn sends it
to second regular user devices via the second carrier
network using the second generic identifier;

combine signals from the first carrier instant
communications processing element of the first carrier
25 network and the second carrier instant communications
processing element of the second carrier network into a
third combined signal and sending the third combined signal
to first private user devices via the first network and to
the second private user devices via the second network.

element of claim 5 further adapted to disclose a number of participants behind the first generic user identifier to the first carrier instant communications processing element of the first carrier network for billing purpose.

7. The private instant communications processing element of claim 2 further adapted to provide enhanced security features for the at least one first private user device.

10 8. The private instant communications processing element of any one of claims 1 to 7 wherein:

the instant communications signals comprise push-to-talk over cellular communications.

15 9. The private instant communications processing element of any one of claims 1 to 7 wherein:

the instant communications signals comprise half-duplex communications.

10. The private instant communications processing element of any one of claims 1 to 7 wherein:

20 the instant communications signals comprise instant text messaging.

11. The private instant communications processing element of any one of claims 1 to 7 comprising a GLMS (group list management server), a presence server and a PoC server.

25 12. The private instant communications processing element of claim 11 wherein the GLMS, the presence server and the PoC server are for connection to the first carrier network through standard interfaces.

a first carrier network delivering wireless access to first regular user devices and first private user devices, and comprising a first CICP (carrier instant communications processing element) adapted to deliver a first instant communications session in respect of a plurality of input signals;

a PICP (private instant communications processing element) adapted to combine instant communications signals from at least one first private user device into a first combined generic signal for inclusion as one input to the first instant communications session delivered by said first carrier network.

14. The system of claim 13 wherein:

the instant communications signals comprise push-to-talk over cellular communications.

15. The system of claim 13 wherein:

the instant communications signals comprise half-duplex communications.

16. The system of claim 13 wherein:

the instant communications signals comprise instant text messaging.

17. The system of claim 13 further comprising:

a second carrier network delivering wireless access to second regular user devices and second private user devices, and comprising a second CICP (carrier instant communications processing element) adapted to deliver a

plurality of input signals;

the PICIP (private instant communications processing element) being further adapted to combine instant communications signals from at least one second private user device into a second combined generic signal for inclusion as one input to the second instant communications session delivered by said second carrier network.

18. The system of claim 13 adapted to set up an instant communications session by:

the PICIP receiving a request from one of the at least one first private user device containing a user identification and containing invitees comprising other private users and/or regular users;

15 sending an invitation to any private users identified in the request via the first carrier network;

receiving acceptances or rejections from private users of the invitation and adding private users to a list of private users for the instant communications session;

20 assigning a generic identifier for the private users on the instant communications session;

25 sending the invitation to regular invitees via the carrier instant communications processing element containing the generic identifier and identifiers of the regular invitees;

the carrier instant communications processing element establishing the instant communications session

that accepted the invitation.

19. The system of claim 13 adapted to set up the instant communications session by:

5 receiving a request from one of the private user devices containing a user identification and containing invitees comprising other private users;

sending an invitation to any private users identified in the request via the first carrier network;

10 receiving acceptances or rejections of the invitation from the private users and adding private users to a list of users for the instant communications session.

20. The system of claim 17 adapted to set up the instant communications session by:

15 receiving a request for instant communications, the request comprising an identifier of a user device making the request, and containing invitees comprising a combination of one or more of private users on A (the first carrier network), regular users on A, private users on B
20 (the second carrier network B), and regular users on B;

the PICP assigning a first generic identifier to the first carrier network and a second generic identifier to the second carrier network;

25 the PICP sending an invitation to the private users on A and B via appropriate carrier network, receiving the private users acceptances/rejections and adding users to each generic identifier accordingly;

users on A through the CICP of A using the first generic identifier;

the PICP sending the invitation to any regular
5 users on B through the CICP of B using the second generic identifier;

the CICP of network A establishing the instant communications session between the regular users on A and a first single generic identifier user having the first
10 generic identifier;

the CICP of network B establishing the instant communications session between regular users on B and a second single generic identifier user having the second generic identifier.

15 21. A wireless user device having wireless access via a carrier network, the wireless user device comprising:

a regular instant communications client adapted to participate in carrier network delivered instant communications sessions;

20 a private instant communications client adapted to participate in instant communications sessions via the carrier network through a private instant communications processing element.

22. The wireless user device of claim 21 wherein the
25 regular instant communications client is a first push-to-talk over cellular client, and the private instant communications client is a second push-to-talk over cellular client.

private instant communications client will not release private information related to the instant communication sessions that the private instant communications client participates in to the carrier network while a regular instant communications client in the same device also concurrently participates in a communication session.

24. A computer readable medium having processor executable instructions stored thereon for execution by a wireless user device, the processor executable instructions comprising:

a regular instant communications client adapted to participate in carrier network delivered instant communications sessions;

15 a private instant communications client adapted to participate in instant communications sessions via the carrier network through a private instant communications processing element.

25. A system of providing a PoC communication session including private user devices and regular user devices in which signals of the private user devices are included in the PoC communication session in a manner that hides identities of the private user devices.